

# Real-World Problem Solving

For use with pages 138–142

## Vitamin A

Vitamin A is very important to the human body. It plays a key role in fending off illness both by regulating the immune system and by maintaining the skin and mucous membranes. It is important for vision because it helps maintain the surface linings of the eyes and helps us to see in the dark. Vitamin A is also important for normal bone growth. It may even reduce the risk of forming certain cancers.

While vitamin A is essential to good health, it is possible to get too much. Because it is fat soluble it can be stored in the body and very large amounts are actually toxic. The Institute of Medicine gives recommendations for safe amounts of vitamin A by age and gender. Their RDA (Recommended Dietary Allowance) for vitamin A is the minimum daily amount that is considered healthy. Their UL (Upper Intake Level) for vitamin A is the maximum daily amount considered to be safe.

### In Exercises 1–6, use the following information.

Trista is looking for an affordable multivitamin to supplement her diet. She analyzed her diet to find that she consumes an average of 600 micrograms of vitamin A each day. At her age, the RDA for vitamin A is 700 micrograms and the UL is 2800 micrograms.

1. Write an inequality to represent the daily amounts of vitamin A from a multivitamin that would give her the RDA amount or more.
2. Solve the inequality in Exercise 1.
3. Write an inequality to represent the daily amounts of vitamin A from a multivitamin that would give her the UL amount or less.
4. Solve the inequality in Exercise 3.
5. Trista buys a multivitamin that has 750 micrograms of vitamin A in each capsule. Will one capsule each day give her the recommended amount of vitamin A? Explain.
6. Can Trista safely take two capsules of her multivitamin each day? Three capsules? Explain.